

# C1 Exercise 3A

Note Title

07/09/2006

1 Solve these simultaneous equations by elimination

$$\textcircled{A} \quad 2x - y = 6$$

$$\textcircled{B} \quad 4x + 3y = 22$$

$$\textcircled{C} = 2\textcircled{A} \quad 4x - 2y = 12$$

$$\textcircled{D} = \textcircled{C} - \textcircled{B} \quad -5y = -10$$

$$\Rightarrow y = 2$$

$$\text{Substitute into } \textcircled{A} \quad 2x - 2 = 6$$

$$2x = 8$$

$$x = 4$$

$$x = 4, y = 2$$

2

$$\textcircled{A} \quad 7x + 3y = 16$$

$$\textcircled{B} \quad 2x + 9y = 29$$

$$\textcircled{C} = 3\textcircled{A} \quad 21x + 9y = 48$$

$$\textcircled{D} = \textcircled{C} - \textcircled{B} \quad 19x = 19$$

$$x = 1$$

Substitute into  $\textcircled{A}$

$$7 + 3y = 16$$

$$3y = 9$$

$$y = 3$$

You could do  $\textcircled{B} - \textcircled{C}$  here, but I've tried to avoid negative signs

(No particular reason to use  $\textcircled{A}$  or  $\textcircled{B}$ .)

$$x = 1, y = 3$$

3

$$\textcircled{A} \quad 5x + 2y = 6$$

$$\textcircled{B} \quad 3x - 10y = 26$$

$$\textcircled{C} = 5\textcircled{A} \quad 25x + 10y = 30$$

$$\textcircled{D} = \textcircled{A} + \textcircled{C} \quad 28x = 56$$

$$x = 2$$

Substitute into  $\textcircled{A}$   $10 + 2y = 6$

$$2y = -4$$

$$y = -2$$

$$x=2, y=-2$$

4

Ⓐ

$$2x - y = 12$$

Ⓑ

$$6x + 2y = 21$$

Ⓒ = 2Ⓐ

$$4x - 2y = 24$$

Ⓓ = Ⓑ + Ⓒ

$$10x = 45$$

$$x = 4\frac{1}{2}$$

Substitute into Ⓐ

$$9 - y = 12$$

$$y = -3$$

use fractions, not  
decimals please. They're  
guaranteed to be  
exactly correct.

$$x = 4\frac{1}{2}$$

$$y = -3$$

5

$$\textcircled{A} \quad 3x - 2y = -6$$

$$\textcircled{B} \quad 6x + 3y = 2$$

$$\textcircled{C} = 2\textcircled{A} \quad 6x - 4y = -12$$

$$\textcircled{D} = \textcircled{B} - \textcircled{C} \quad 7y = 14$$

$$y = 2$$

Substitute into  $\textcircled{A}$   $3x - 4 = -6$

$$3x = -2$$

$$x = -2/3$$

$$x = -2/3, y = 2$$

6

$$\textcircled{A} \quad 3x + 8y = 33$$

$$\textcircled{B} \quad 6x = 3 + 5y$$

$$\textcircled{C} = \textcircled{B} \text{ rearranged } 6x - 5y = 3$$

$$\textcircled{D} = 2\textcircled{A} \quad 6x + 16y = 66$$

$$\textcircled{E} = \textcircled{D} - \textcircled{C} \quad 21y = 63$$

$$y = 3$$

$$\text{Subst. into } \textcircled{A} \quad 3x + 24 = 33$$

$$3x = 9$$

$$x = 3$$

$$x = 3, y = 3$$